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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,711

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1333 7590 11/30/2009  
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EXAMINER

LOUIE, MANDY C

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

11/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/573,711	<b>Applicant(s)</b> BOWER ET AL.	
	<b>Examiner</b> MANDY C. LOUIE	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11 and 14-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/18/06</u> .                                                | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of 1-8, 11, 14-24 in the reply filed on 07/20/09 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 19 recites the limitation "the overcoat" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-8, 11, 15-18, 20-21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita [US 20040132946] in view of McCormick [US 6593690].

Regarding claim 1, Yamashita teaches a method of coating fine pattern (well defined discrete areas) [0004, Fig. 2a-c] where the substrate may be fabric (flexible substrate), wherein the method comprises steps of creating a lyophobic or lyophilic surface pattern on the substrate, a desired pattern of lyophilic or lyophobic areas being left [Fig. 2a-c; 0064], overcoating the created surface pattern with a layer of functional paint (coating solution), the solution withdrawing from the lyophobic areas and collecting on the lyophilic areas [0024, 0056-0058, 0064]. However, Yamashita appears to be silent in teach processing in a continuous roll to roll manner. McCormick remedies this.

Regarding claim 1, McCormick teaches continuous roll-to-roll process may allow for increased production and cost in producing an electronic devices [col 4, ln 17-24].

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a continuous roll-to-roll method in forming an electric device as suggested by McCormick (wherein Yamashita teaches such coating process may be used for form electronic devices [Yamashita, 0070-0072]). One would have been motivated to do so to in order to increase productivity and reduce costs.

Regarding claim 2, Yamashita in view of McCormick teaches the coating solution comprises more than one distinct layers (i.e. each discrete coated areas) [Fig. 2c]. Although the prior art does not explicitly teach simultaneously overcoating the coating solution, Yamashita in view of McCormick does teaches such coating is laminated onto the substrate [Yamashita, 0012], wherein it would have been apparent to one of ordinary skill in the art that such coating technique would innately suggest simultaneously overcoat the coating solution onto the substrate.

Regarding claim 3, Yamashita in view of McCormick teaches the surface pattern is created by means of optical means using light or laser to write the pattern [Yamashita, 0025, 0067].

Regarding claim 4, Yamashita in view of McCormick teaches the steps of creating a surface pattern on the substrate and overcoating the surface pattern with one or more layers of coating solution takes place inline [Yamashita, 0064; Fig. 2a-b] (i.e. patterning prior to applying coating solution), in light of instant specification on page 2, In 15-17.

Regarding claim 5, Yamashita in view of McCormick teaches the created surface pattern comprises a fluoropolymer [Yamashita, abstract].

Regarding claim 6, Yamashita in view of McCormick teaches the created surface pattern may contain a fluoroalkylsilane (silicone release agent) [0073].

Regarding claim 7, Yamashita in view of McCormick teaches the created surface pattern comprises chemical species containing one or more lyophobic moieties (i.e. fluoroalkyl group) [Yamashita, 0027] and adhesive moieties (amorphous silicon precursors) [Yamashita, 0032].

Regarding claim 8, Yamashita in view of McCormick teaches the coating solution is a solvent based solution [Yamashita, 0065].

Regarding claim 11, Yamashita in view of McCormick teaches the coating solution may have conductive properties [Yamashita, 0071].

Regarding claim 15, Yamashita in view of McCormick teaches the coating solution is subsequently dried [Yamashita, 0065].

Regarding claim 16, Yamashita in view of McCormick teaches the composition of the coating solution de-wets from the lyophobic areas upon application to high wettability areas [Yamashita, 0064-0065] (wherein it would have been apparent that such results would arise from the solution that is innately sufficiently diluted and would occur spontaneously due to the nature of the surface tensions between the coating solution and patterned surface). Although the prior art does not explicitly teach the spontaneous dewetting occur during drying, it would have apparent to one of ordinary skill in the art that at the event of which the coating solution is applied, some of the solvent within the solution would innately begin to dry on the substrate.

Regarding claim 17, Yamashita in view of McCormick teaches the coating solution is destabilised at set spatial and temporal locations of the coating [0064-0065].

Regarding claim 18, Yamashita in view of McCormick teaches the surface pattern is switched from lyophobic to lyophilic, or vice versa, by means of light [Yamashita, 0054, 0056].

Regarding claim 20, Yamashita in view of McCormick teaches the lyophobic surfaces yields a receding angle with the coating solution of 50 degrees or more, while the lyophilic surfaces yields a receding angle of 10 degrees or less [Yamashita 0074].

Regarding claim 21, Yamashita in view of McCormick teaches the lyophobic surfaces yields a receding angle with the coating solution of 90 degrees or more, while the lyophilic surfaces yields a receding angle of 10 degrees or less [Yamashita 0074] which overlaps with the claimed range. Although, the prior art does not explicitly teach the lyophilic surfaces yields a receding angle of 5 degrees or less. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize such angle as a workable parameter so as to adjust the degree and amount of time a certain coating wets.

Regarding claim 24, Yamashita in view of McCormick teaches the coating solution may be deposited onto the created surface pattern by means of inkjet [Yamashita 0070].

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of McCormick and further in view of Yamashiki [US 6455208].

Teaching of Yamashita in view of McCormick is aforementioned, but appears to be silent in teach including a surfactant to the coating solution. Yamashiki remedies this.

Regarding claim 14, Yamashiki teaches a surfactant can be added to a coating solution to improve the coating ability of the solution [col 15, ln 35-45].

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a surfactant to the coating solution as suggested by Yamashiki. One would have been motivated to do so to improve the coating ability (i.e. surface uniformity, dispersibility and so forth) [Yamashiki, col 15, ln 35-45].

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of McCormick and further in view of Hill [US 6552820].

Teaching of in view of McCormick is aforementioned, but appears to be silent in teach further layers of coating solution is applied over the first overcoat to create a further substrate onto which a further pattern may be created and/or further layers of coating solutions applied. Hill remedies this.

Regarding claim 19, Hill teaches a first color may be printed onto the surface, wherein another second color is printed on top of the first color so as to perceived as combined single color [abstract].

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply further layers of coating solutions to a first overcoat as suggested by Hill. One would have been motivated to do so as to achieve a desirable visible combined color on an opaque substrate [Hill, col 3, ln 1-10] (for electronic devices [Hill, col 1, ln 15-20]).



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7. Claims 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita in view of McCormick and further in view of Sen [Coated textiles: principles and applications].

Teaching of Yamashita in view of McCormick is aforementioned, but appears to be silent in teach depositing the coating solution with a pre-metered process or a post-metered process. Sen remedies this.

Regarding claims 22 and 23, Sen teaches a pre-metering process may have advantageous of being more accurate and highly reproducible; while a post-metering system may have low investment cost and higher productivity [Chap. 3.1.2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the coating solution with either pre-metering or post-metering as suggested by Sen. One would have been motivated to do so to obtain either of the advantages as described above.

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-4, 8, 11, 14-21, 22, 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 11/666250 (250). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claim in the instant application fully encompass the subject matter of the claims of 250 or alternatively the claims of 250 anticipates the claim in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

1. No claim is allowed.
2. Claims 1-8, 11, 14-24 are rejected for the reasons aforementioned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MANDY C. LOUIE whose telephone number is (571)270-5353. The examiner can normally be reached on Monday to Friday, 7:30AM - 5:00PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571)272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C. L./  
Examiner, Art Unit 1792

/Timothy H Meeks/  
Supervisory Patent Examiner, Art Unit 1792